

November 7, 2013

CONFIDENTIAL

Mr. Thomas Malone President International Association of Fire Fighters Local 1784 Memphis Fire Fighters Association Via email

Re: Memphis Pension Reform Report Review

Dear President Malone:

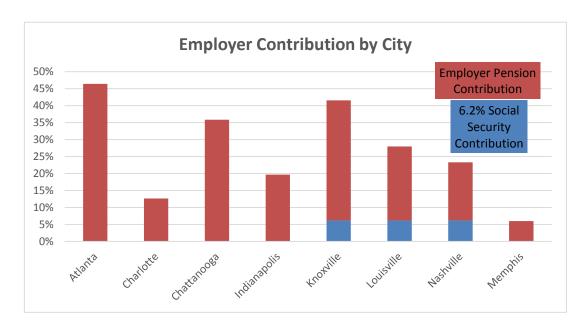
At your request, Pension Trustee Advisors (PTA) has reviewed the September 14, 2013 report on City of Memphis Retirement Benefit Alternatives. While we commend the City for its efforts to improve the funding position of the City of Memphis Retirement System, there are several findings and conclusions in the "Alternatives" report which we wish to bring to your attention.

We believe that these critical points include:

- The City contributions have been only 6% of pay, which is less than private sector employers make to Social Security. We are not aware of any fire department in the country where contributions are this low. The contribution rates of seven comparable cities range from 12.65% to 46.41% -- two to more than seven times as much as Memphis.
- The so-called unsustainability is primarily due to the City not making adequate contributions. Even if the financial crisis had not occurred and returns had not been poor, it is impossible to finance a pension benefit which costs more than 6% of pay by contributing only 6% of pay.
- Memphis benefit levels are not excessive when compared with firefighter benefit levels of comparable cities
- Several assumptions, methods and techniques are used in the cost illustrations
  which make the costs appear particularly onerous. With reasonable changes to
  actuarial methods and assumptions, costs might be reduced significantly
- Several assumptions, methods and techniques are used in the benefit illustrations which make the proposed benefit changes appear less draconian than we believe they are.

# I - City contributions are much lower than peers

We understand that Memphis routinely compares it labor costs to seven comparably sized regional cities. As shown on the following table, the contribution made to the Memphis Retirement System is much smaller than those made by the seven peer cities to their plans which cover firefighters.



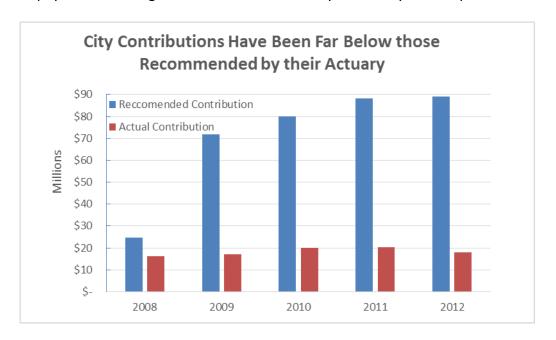
As you can see all of the cities contribute at least twice as much as Memphis. Three of these cities have their firefighters covered by Social Security, so they pay 6.2% of pay to social security in addition to the retirement system contribution. In fact, the Memphis 6% contribution is even less than the 6.2% Social Security contribution made by other US employers who provide no pension whatsoever to their workers.

#### II - Inadequate city contributions have created underfunding.

The July 2012 plan actuaries report indicated that the City's normal cost for the plan is approximately 12% of pay, after reduction for 6.5% firefighter contributions and adjustment for end of year payment. This means that the City would need to contribute 12% of pay, just to keep up with the value of benefits promised each year. The actuary also calculated a full recommended contribution level of 30.3% of pay, to help pay off unfunded liability. While the drop in the financial markets played a major part in creating the unfunded liability, the City contributions which were not even equal to the normal cost share is a major reason that the costs continue to escalate. It is impossible



to pay for a promise which costs 12% of pay by only making pension contributions of 6% of pay. The following table illustrates the history of the City's inadequate contributions.



# III - Firefighter benefit levels are modest

We have obtained information about the benefit levels for firefighters at the seven peer cities and quantified the value of the benefits for the typical firefighter. We used data and assumptions from PriceWaterhouseCoopers (PWC), the City's actuary.

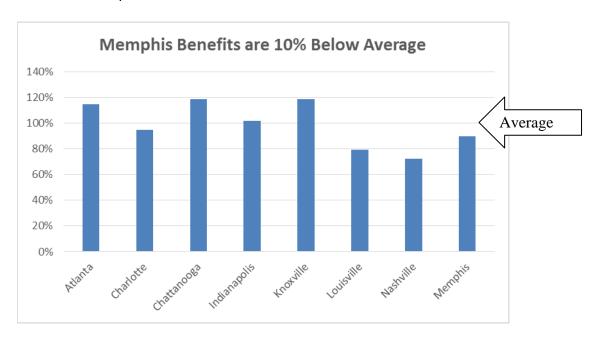
We find that the level of Memphis benefits is 10% below the average of the other seven cities. This reflects the benefit levels of the various systems, including cost-of-living adjustments and surviving spouse benefits. The following table illustrates key benefit provisions for our average firefighter aged 40 with 12 years of service as of 2012:



### **Key Plan Features**

Peer City	Retirement Age & Service	Benefit Multiplier	Average Pay Period	Cost of Living Adjustment	Surviving Spouse
	& Service	Wattiplier	Terrou	rajustificite	Benefit
Memphis	53 & 25	62.50%	3 years	Ad Hoc (assume	75%
				0.5%)	
Atlanta	55 & 27	81.00%	3 years	1.00%	75%
Charlotte	53 & 25	65.00%	2 years	Ad Hoc (assume	67%
				0.5%)	
Chattanooga	53 & 25	68.75%	3 years	3.00%	None
Indianapolis	52 & 24	58.00%	Base of First	CPI (assume	60%
			Class	2.25%)	
			Firefighter		
Knoxville	53 & 25	62.50%	2 years	3.00%	50%
Louisville	55 & 27	67.50%	3 years	None	None
Nashville	53 & 25	50.00%	5 years	80% CPI (assume	None
				1.75%)	

The following chart compares the value of cumulative lifetime benefits (at age 40) for each of these plans, when all of these factors above are considered, based on the PWC actuarial assumptions.





Many of the other plan characteristics are comparable between the plans:

	DROP	Disability Benefit	Vesting Period	Social
				Security
Memphis	Yes	Yes	10 years	No
Atlanta	No	Yes	5-10 years	No
Charlotte	No	Yes	5 years	No
Chattanooga	Yes	Yes	10 years	No
Indianapolis	Yes	Yes	20 years	No
Knoxville	Yes	Yes	5 years	No
Louisville	Yes	Yes	5 years	Yes
Nashville	Yes	Yes	5 years	Yes

## IV- Certain actuarial assumptions and techniques cause plan to look more expensive

While the costs of the retirement program are not insignificant, (and are certainly more than the 6% that the City is contributing or the 6.2% that all private sector employers pay) there are several actuarial assumptions and techniques which cause this plan to look more expensive than would be portrayed under more mainstream actuarial assumptions and techniques. These include:

- Salary growth The PWC actuarial report is based on an assumed growth in salaries of 5%. Based on the participant salary information received, the average annual salary increase over the past 9 years is only 3.49%. While PWC may have other reasons to believe that 5% is an appropriate assumption for the future, this has the effect of increasing costs substantially.
- Return on Assets Although the PWC assumed rate of investment return of 7.5% is in the range of typical actuarial assumptions, it is in the low end of that range. The most recent survey of assumed rates of investment returns from the National Association of State Retirement Administrators indicates that less than one-third of the statewide plans use assumptions as low as 7.50%, while the majority of plans use assumed rates of return of 7.90% or higher. The use of such a low rate of return causes the costs and funding position of the plan to look worse than would be indicated by more mainstream assumptions. While the use of a conservative rate would be fiscally responsible if the City were actually contributing based on those rates, its use in this instance serves no other apparent purpose than to create the appearance of excessive costs.



- Asset smoothing The PWC costs and projections reflect a "smoothed value" of assets which is nearly \$100 million lower than the actual market value of assets. Based on strong investment return of 11.15% for the fiscal year ending June 30, 2013, this disparity grows to more than \$150 million. Because of the projection techniques and funding policy used, this \$150 million is completely ignored in projected costs and assumed to be never available for a reduction in pension costs. While it is certainly possible that the fund will return less than 7.5% over some period of time, making substantial benefit cuts without considering \$150 million that actually exists seems premature. Most systems use an asset smoothing method which recognizes unusual gains or losses over a period of five years. The current method will never recognize this \$150 million gain as long as it remains less than 10% of the assets. While this would be a reasonable method and comply with actuarial standards of practice if the City were funding on this basis, it has the current effect today of ignoring \$150 million in assets which really exist. And since the City has not funded on an actuarial basis for several years, the deferral of the \$150 million has been truly meaningless.
- Expression of projected costs as dollar amounts Most of the graphs shown in the September 14 "Retirement Benefit Alternatives" illustrate City costs as increasing at an upward slope. But much of this upwardly sloping increase is as a result of the assumed salaries growing at 5%. If these charts were expressed as a percentage of worker pay (or City revenues, or City tax base or any other variable actually related to the economy) instead of constant 2012 dollars, the graphs would be far less alarming.

While developing funding policy on a rigorous or conservative basis is a strong policy, because the City does not actually make contributions on this basis, such a policy is merely arbitrary and meaningless. A more appropriate approach would be to develop a policy which the City might be able to actually utilize for its contributions, and perhaps later strengthen the policy over time. Below is a comparison of 2013 costs under current policy with one estimated using a policy which:

- Is based on 3.5% payroll growth assumption rather than 5.0%
- Is based on market value of assets rather than \$150,000,000 less
- Amortizes the unfunded liability as a constant percentage of payroll over 20 years rather than a level dollar amount over 30 years



Estimated Impact of Change in Funding Policy as of July 1, 2013 (\$000)

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	Current Policy	Proposed Policy
Salary Growth Assumption	5.0%	3.5%
Actuarial Liability	\$2,566,000	\$2,341,000
Asset Valuation Basis as of 2013	Actuarial Value	Market Value
Value of Assets	\$1,884,000	\$2,040,000
Unfunded Liability	\$682,000	\$301,000
Estimated Normal Cost	\$57,000	\$43,000
Employee Contributions	\$22,000	\$22,000
Basis for Amortization of Unfunded	30 years, level dollar	20 years, increasing by
Liability		3% per year
Amortization of Unfunded Liability	\$55,000	\$21,000
Interest to End of Year	\$7,000	\$3,000
Total Actuarial Required Contribution	\$96,000	\$46,000

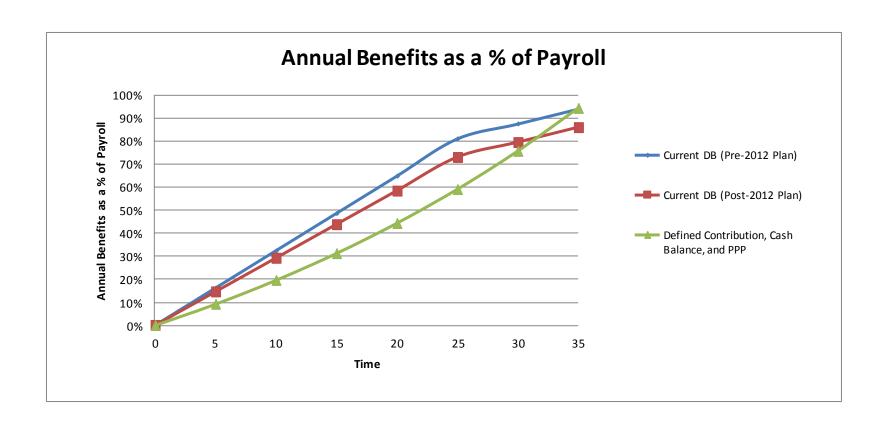
The numbers in the proposed column are estimates. We encourage the City and PWC to make precise calculations and seriously consider each of the adjustments identified (salary assumption, market value of assets, amortization policy). While it might not be prudent to adopt all three of these modifications, clearly the reduction in ARC from more than \$90 million to less than \$50 million suggests that there may be potential to target a funding number in the range of \$60 million (as PWC has proposed) without resorting to drastic benefit reductions.

# V - Certain actuarial assumptions and techniques cause proposed plan to look more reasonable

We have reviewed benefit illustrations conducted by the International Association of Firefighters which attempted to replicate the benefit illustrations included in the September 14 report.

That report illustrated that the benefit value for the current plan would grow to more than 70% of pay after 25 years and approximately 85% of payroll by 35 years. The proposed program was comparable, approaching 60% after 25 years, then exceeding 90% after 35 years. This is illustrated in page 38 of the September 14 PWC report.





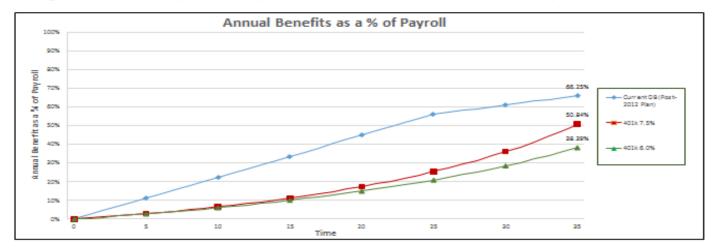
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The IAFF calculations, which I have reviewed, paint a much more moderate picture. The current program provides benefits of just 56% of pay after 25 years, topping at 66% after 35 years. This is consistent with the actual plan provisions of 2.25% per year of service for the first 25 years, plus 1% per year beyond 25 years.

Furthermore, the IAFF calculations use more realistic assumptions for investment return and annuitization costs. Many studies show that investment returns earned by individuals in their 401(k) plans are lower than those returned by professionally managed defined benefit plans. The IAFF illustrated returns at both the DB rate of 7.5% as well as more realistic returns at 6.0%. Although there is currently no availability of annuities earning 4%, the IAFF analysis conceded that this might be a reasonable approach for comparison. We have not been able to replicate the PWC approach, but it appears that they assumed much more favorable DC returns and annuity rates. The IAFF calculations are shown below:

# Annual Benefits as a % of Payroll

- Police & Fire Illustration of Accrual Pattern as a Percentage of Pay
- Age 25, \$50,000 salary, 4.11% salary scale, 7.5/6.0% investment return, 4.0% annuity interest rate





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In addition to the different results, we find that another assumption produces misleading comparisons. The comparison of the current defined benefit program with proposed alternative program is based on an individual hired at age 25. According to the actuarial report, the average hire age for general employees is 37 and the average hire age for Police Officers and Firefighters is 28, for a combined average of 31. The use of a younger hire age makes an alternative program appear stronger than the use of an older hire age Defined contribution plans are most effective when they are started early in one's career. It makes a big difference if savings starts at age 25 versus age 31. If a worker has six more years to have their investments grow, they would have about fifty percent more. The PWC analysis does not represent the heavy reductions in benefits which would occur under the proposed plan versus the current program.

For the majority of members, a change to the proposed 401(k)-type or Cash Balance program would result in dramatically reduced benefits. This is even more pronounced if applied to the current workforce mid-career, where there is little time for a defined contribution type program to catch up in value to the defined benefit program. The most misleading feature of the illustrations is the failure to consider its impact on these current Memphis workers, but only focusing on a hypothetical 25 year old hire under a single program for their entire career.

For example, consider the average firefighter age 40 with 12 years of service. Under the current program, they would be eligible to retire once they've worked 25 years. This would provide them a benefit of 62.50% of their average pay at retirement. Using the PWC 5% salary growth assumption, this equates to 59.6% of their final pay. But if this individual is transferred today to a DC plan or its equivalent, the loss in benefits is substantial. Twelve years of service entitles the firefighter to a pension of 30% of pay. But since this is pay 13 years before retirement, the 30% erodes to only 15.2% of pay. This means that the replacement 6% DC plan must be used to fill the 44.4% gap. But as you can see from PWC's own graphs, after 13 years, a DC program can only provide about 25% of pay. And this is probably based on retirement at age 65, not age 53. We also believe that this is an optimistic estimate for the investment return reasons discussed above.

The bottom line is that our average firefighter would have their total benefit more than cut in half if the proposed program goes into effect.



The following table illustrates the dramatic drop in benefit value for the average firefighter:

	Current Program	Proposed Program
Service at Transition	12 years	12 years
DB Service after Transition	13 years	None
Total DB Service	25 years	12 years
Pension Multiplier	62.5%	30.0%
Salary at Retirement	\$102,932	\$102,932
Average Earnings	\$98,108	\$52,029
Pension	\$61,318	\$15,609
6% DC Contribution – First Year	\$0	\$3,275
Accumulated DC Value at Retirement	\$0	\$86,083
Equivalent Pension Amount	NA	\$6,469
Total Pension	\$61,318	\$22,078
Pension as % of Pay at Retirement	59.6%	22.4%
Loss in Annual Pension		\$39,240

#### **Alternative Solutions**

The September 14 report recommended that the City triple its contributions to a level more appropriate with a meaningful pension system. They proposed an annual contribution of roughly \$60 million. This would be a substantial improvement of the current policy which is to fund less than even the Social Security requirement.

In order to make up the difference between \$60 million and the actuarial required contribution, the report proposes dramatic cuts in benefits. We propose instead the following approach:

- Begin contributing at the \$60 million level as currently recommended
- Increase this contribution each year to match payroll growth
- Ask PWC to investigate measurement of the liabilities based on a more appropriate salary growth rate to recapture some of the \$200 million difference
- Gradually phase-in the recognition of the \$150 million deferred investment gains



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- Ask PWC to measure the long run sustainability of the plan
- If a gap exists, propose modest changes in contributions or benefits as necessary to close the gap

As mentioned above, we encourage the City and PWC to analyze the various actuarial funding policy changes to see their impact on City contributions.

#### Conclusions

Our findings are threefold. First is that much of the pension problems are attributable to inadequate City contributions, which are even less than other Memphis taxpayers make to Social Security.

Second is that while the plan needs to be funded properly, the September 14 analysis uses actuarial techniques, assumptions and illustrations which paint a problem much worse than would be demonstrated using more conventional techniques, assumptions and illustrations. In particular, we find that the unfunded liability is being painted as particularly onerous. The assets, including projection of future assets, do not include approximately \$150 million of "smoothed" assets. And the liabilities, based on an assumed salary growth rate of 5.0%, are approximately \$200 million higher than they would be if based on the historical growth rate of 3.49%. These two factors account for more than half of the projected unfunded liability as of 2013. Consequently, if the City increases its contributions to the \$60 million level proposed by PWC, such contributions should be able to adequately fund the current program.

Finally is that the proposed "solution" would cause dramatically lower benefits for nearly all Memphis workers, particularly if applied prospectively to current workers.

I am happy to discuss this further at your convenience.

Sincerely,

William B. Fornia, FSA

President

